

NEW GENERA AND SPECIES OF MEXICAN PHYCITINAE (LEPIDOPTERA: PYRALIDAE)

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Abstract.—Two new genera of phycitine moths from Mexico are described. They are *Nevacolima*, n. gen. with *N. jaliscoensis*, n. sp. and *N. zodia*, n. sp., and *Megacerdresa*, n. gen. with *M. cordobensis*, n. sp. Also described from the Republic is *Homoeographa mexicana*, n. sp.

Key Words: Moths, phycitines, Mexico

Seventy-nine species of phycitines have been previously reported from Mexico (Cibrián-Tovar et al. 1986, Hedlin et al. 1981, Heinrich 1956, McGuffin 1967, Mutuura and Neunzig 1986, Neunzig 1983, 1986, 1990). Based on the size of the Republic, the diversity of habitats found in the country, and the abundance of phycitine species elsewhere in North America, this number obviously represents only a small fraction of the Mexican fauna of Phycitinae.

While identifying phycitines on loan from the San Diego Natural History Museum (SDNHM), and the University of California at Davis (UCD), I found four additional Mexican species belonging to the subfamily. All are new species, one is a *Homoeographa*, and the others are of particular interest because they belong to previously undescribed genera.

Nevacolima Neunzig, NEW GENUS

Gender.—Feminine.

Type species.—*Nevacolima jaliscoensis* Neunzig.

Antenna of male simple (Fig. 9) or with sinus at base of shaft (Fig. 8). Front convex, roughly scaled. Labial palpus oblique (Fig.

13). Maxillary palpus simple. Haustellum well developed. Ocellus present. Basal half of costa of forewing of male (Figs. 6, 7) slightly convex or slightly concave; underside of wing of male simple, without costal fold or sex-scaling. Forewing without raised scales; with eleven veins, R_2 at base close to, but separate from R_{3+4} and R_5 ; R_{3+4} and R_5 stalked for over $\frac{1}{2}$ their lengths; M_1 slightly curved to straight; M_2 and M_3 separate, but close at base; CuA_1 from lower outer angle of cell; CuA_2 from well before lower outer angle of cell. Hindwing (Figs. 6, 7) with eight veins (1A, 2A and 3A considered together to be one vein); $Sc + R_1$ and Rs fused for about $\frac{1}{2}$ their lengths beyond cell; M_1 from upper outer angle of cell; M_2 and M_3 stalked for about $\frac{1}{2}$ their lengths; CuA_1 from lower outer angle of cell; CuA_2 from well before angle of cell; cell less than $\frac{1}{2}$ length of wing. Male abdominal segment 8 with ventral scale tufts (Figs. 16, 19); scales forming tufts pale to black, short to long, mainly straight and slender; sclerotized bar associated with tufts with rather large, swollen, distally-rounded, medial projection or slender medial projection. Male genitalia (Figs. 14, 15, 17, 18) with uncus absent; gnathos with distal part consisting of two

well-developed, posterolaterally diverging, acute elements; transtilla a well-developed transverse bar, borne by very slender lateral bases; juxta a weakly sclerotized plate with short, setiferous, lateral lobes; valva trilobed, divided into short, basal, weakly sclerotized, subtriangular, costal lobe, a more usual appearing, elongate, spatulate element and a lobelike sacculus; inner base of elongate spatulate element with pale, digitate lobe; linear aggregation of long slender scales originating at base of valva and sacculus; aedoeagus with two clusters of stout, spinelike cornuti; vinculum well developed.

The female of *Nevacolima* is unknown.

In some respects, particularly the reduction, or extensive modification, of the uncus and gnathos, and the trilobed valva, the male genitalia of *Nevacolima* resemble those of *Gabinius* Heinrich, *Ohigginsia* Neunzig, and *Peadus* Heinrich, however, there are major differences. For example, in *Nevacolima* the only posterior structure that is clearly defined is the gnathos, whereas in *Gabinius*, *Ohigginsia*, and *Peadus* elements that usually comprise the gnathos are considered to be absent, and an uncus although reduced, is present. Also, the transtilla in *Nevacolima* is complete and a distinct part of the genitalia; in the related genera the transtilla is absent, or weakly developed (but never complete).

Nevacolima jaliscoensis Neunzig,

NEW SPECIES

Figs. 1, 6, 9, 13–16

Type locality.—10.8 mi N. Nevado de Colima, Jalisco, Mexico.

Diagnosis.—The simple male antenna (Fig. 9), in conjunction with the genitalia that lack an uncus and have a complete transtilla (Figs. 14, 15) distinguish *jaliscoensis* from other Phycitinae.

Description.—Length of forewing: 6.5–8.5 mm. Head with front brownish white; vertex mostly dark brown and reddish brown with fuscous or black laterally; antenna sim-

ple (Fig. 9); labial palpus white basally, mostly fuscous, or black, with some red and white medially and distally; maxillary palpus fuscous, or black, and white. Thorax with dorsum brown, and with patch of red and black laterally; collar similar to dorsum. Forewing without antemedial line; most of costal half of wing dusted with white, with red and black, elongate, medial, costal patch, and suffused with fuscous, or black, distally; posterior half ochre, red and reddish brown with fuscous, or black, distally; postmedial line mostly white, weakly developed; discal spots black, obscure to moderately distinct. Hindwing smoky fuscous, darker along veins and near costal and outer and posterior margins. Male genitalia (Figs. 14, 15) as in description of genus. Female unknown.

Distribution.—Known only from the type locality, west-central Mexico.

Holotype.—♂—Highway 54, 10.8 mi N. Nevado de Colima, Jalisco, Mexico, 27–30 May 1989, Bloomfield, genitalia slide 3501 HHN (SDNHM).

Paratypes.—Same collection data as for holotype, 5 ♂, genitalia slides 3503, 3504 HHN (SDNHM, NCSU).

Nevacolima zodia Neunzig,

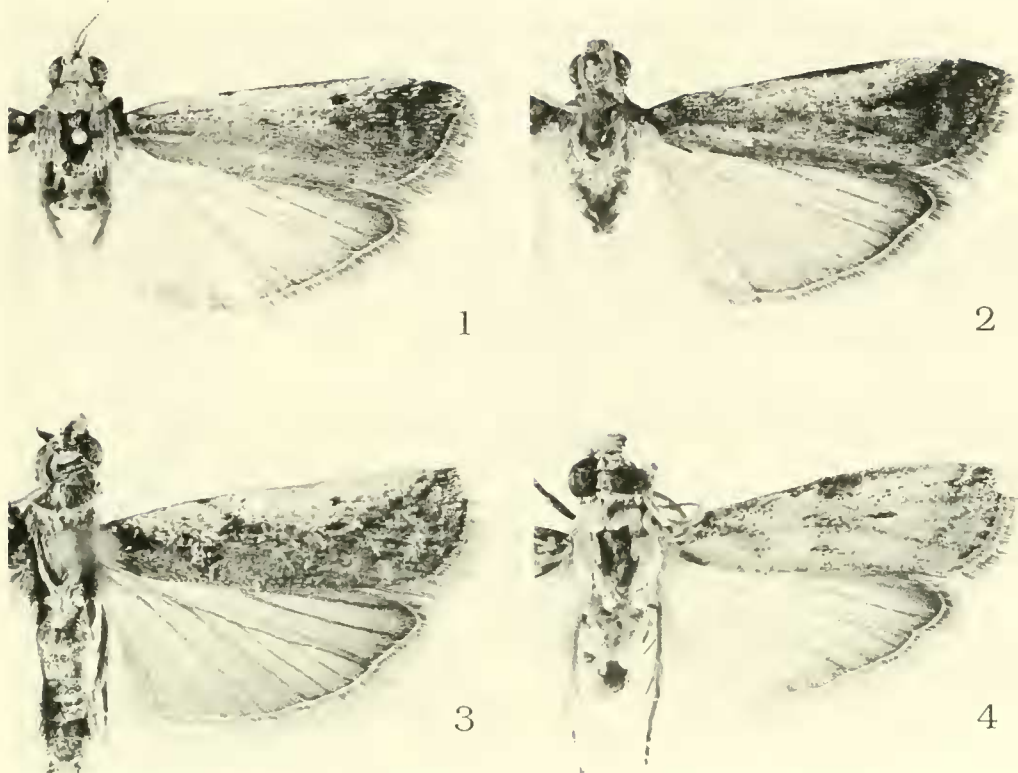
NEW SPECIES

Figs. 2, 7, 8, 17–19

Type locality.—10.8 mi N. Nevado de Colima, Jalisco, Mexico.

Diagnosis.—The complex male antenna (Fig. 8) with its basal sinus and associated sensilla, along with the appearance of the male genitalia (Figs. 17, 18) provide diagnostic features.

Description.—Length of forewing: 7.0 mm. Head with front brownish white; vertex mostly pale brown and brownish red with fuscous, or black, laterally; antenna of male (Fig. 8) with sinus at base of shaft; mesially projecting spinelike sensillum at base of sinus, and another similar sensillum from apex of sinus; sinus and sensilla partially covered with appressed scales; seven



Figs. 1-4. Male adults. 1, *Nevacolima jaliscoensis* n. sp., holotype (7.0 mm). 2, *Nevacolima zodia* n. sp., holotype (7.0 mm). 3, *Megacerdres cordobensis* n. sp., holotype (9.0 mm). 4, *Homoeographa mexicana* n. sp., holotype (7.0 mm). (Length of forewing in parentheses.)

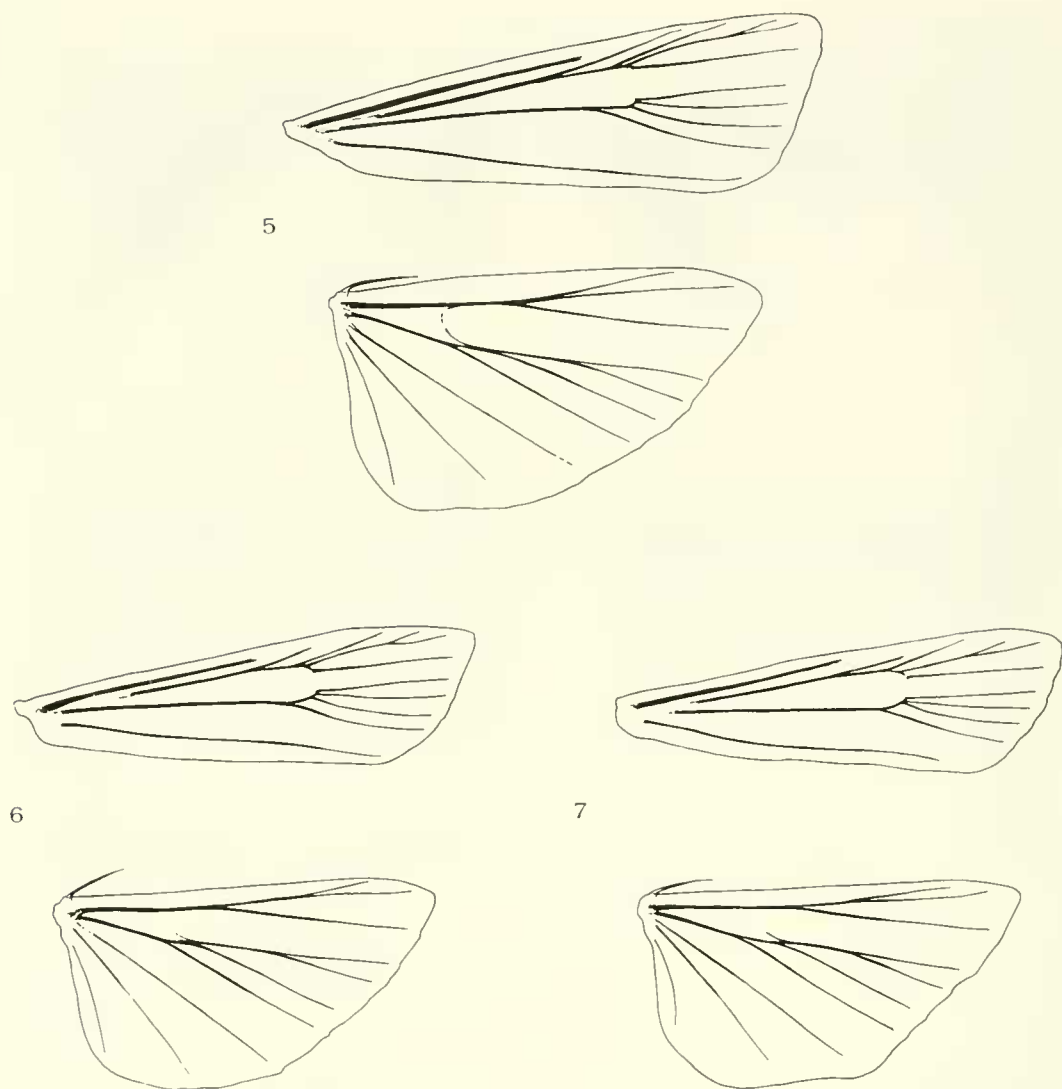
segments of shaft just distad of sinus with smaller, mesially projecting, basally-scaled sensilla; labial palpus white basally, segments 2 and 3 red, fuscous, or black and white; maxillary palpus fuscous basally, white distally. Thorax with dorsum mostly brown; collar similar to dorsum, with some red anteriorly. Forewing without antemedial line; most of costal half of wing dusted with white, with red and black, elongate, medial, costal patch and suffused with fuscous, or black, distally; posterior half pale brown and red suffused with fuscous, or black; postmedial line mostly white, weakly developed; discal spots black, indistinct. Hindwing smoky fuscous, darker along veins and near costal, outer and posterior margins. Male genitalia (Figs. 17, 18) as in *N.*

jaliscoensis with the following differences: distal elements of gnathos shorter; sacculus more completely fused to valva; vinculum distinctly longer than greatest width; aedeagus more elongate, with clusters of spines curved. Female unknown.

Distribution.—Known only from the type locality in west-central Mexico.

Holotype.—♂—Highway 54, 10.8 mi N. Nevado de Colima, Jalisco, Mexico, 27-30 May 1989, Bloomfield, genitalia slide 3502 HHN (SDNHM).

Although obviously related to *N. jaliscoensis*, *zodia* is significantly different, particularly with regard to the male antennae, to possibly justify placing the latter species in a different genus. However, inasmuch as females of both species are unknown, it is



Figs. 5-7. Male wing venation. 5, *Megacerdres cordobensis* n. sp. (9.0 mm). 6, *Nevacolima jaliscoensis* n. sp. (7.5 mm). 7, *Nevacolima zodia* n. sp. (7.0 mm). (Length of forewing in parentheses.)

best, at this time, to group the species together.

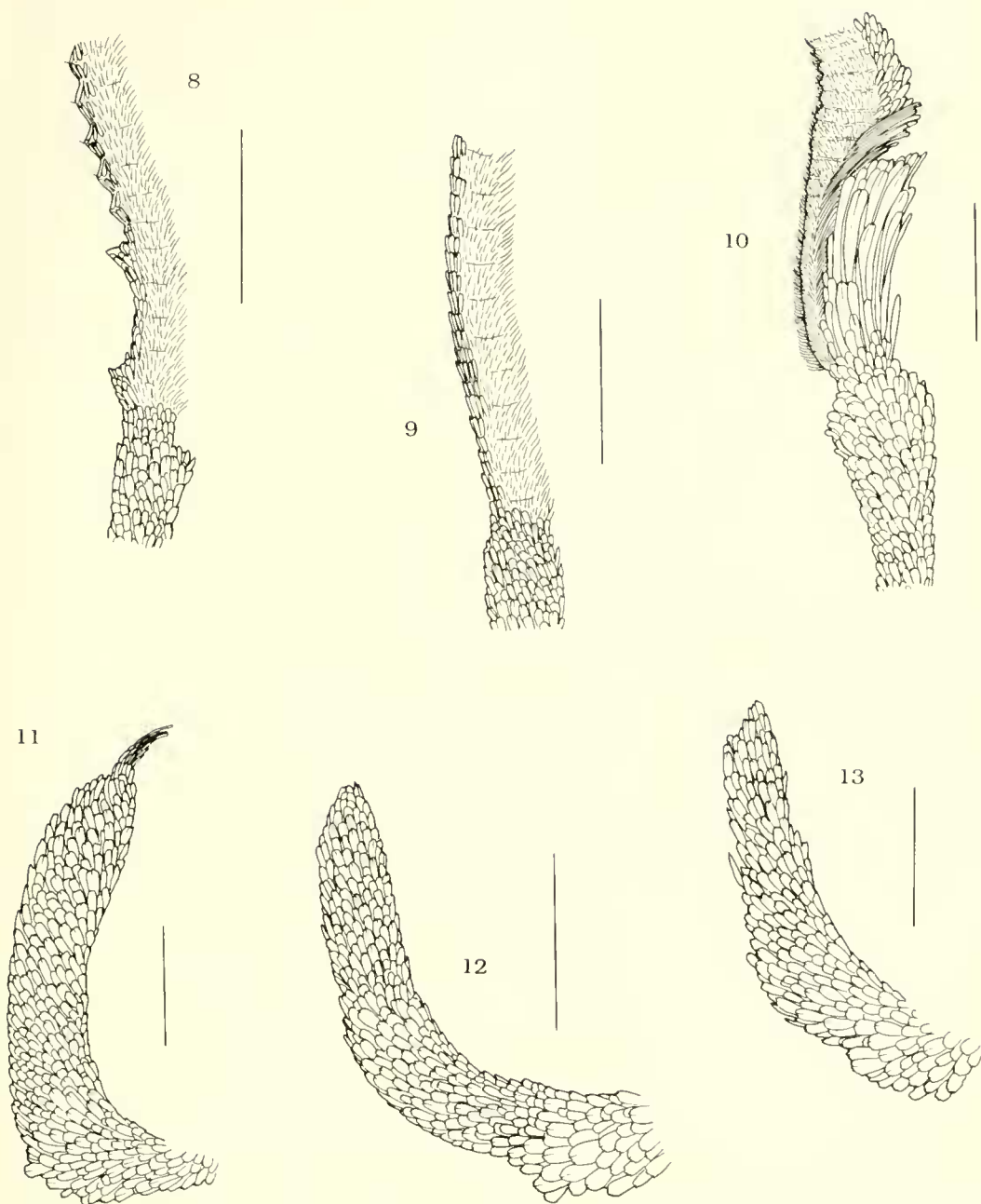
***Megacerdres* Neunzig,
NEW GENUS**

Gender.—Feminine.

Type species.—*Megacerdres cordobensis* Neunzig.

Antenna of male (Fig. 10) with scape elongate, cylindrical; basal segments of shaft

enlarged and forming a distinct sinus; inner margin of sinus with basal and distal, small, spinelike sensilla; outer margin of sinus with basal tuft of slender scales; female antenna simple; sensilla trichodea (cilia) of shaft of male short and abundant. Frons convex. Labial palpus (Fig. 12) upcurved, reaching above vertex. Maxillary palpus simple. Haustellum well developed. Ocellus present. Forewing of male (Fig. 5) with basal



Figs. 8-13. Male antennae and labial palpi. 8, *Nevacolima zodia* n. sp., frontal view of base. 9, *Nevacolima jaliscoensis* n. sp., frontal view of base. 10, *Megacerdres cordobensis* n. sp., frontal view of base. 11, *Homoeographa mexicana* n. sp., lateral view. 12, *Megacerdres cordobensis* n. sp., lateral view. 13, *Nevacolima jaliscoensis* n. sp., lateral view. (All scale lengths 0.5 mm.)

half of costa slightly convex; underside of wing, of male, with sex-scaling in costal half; upperside of wing with groups of slightly raised scales; with eleven veins; R_2 separate from R_{3+4} and R_5 at base; R_{3+4} and R_5 stalked for about $\frac{2}{3}$ their lengths; M_1 slightly curved; M_2 and M_3 separate; CuA_1 from lower outer angle of cell. Hindwing (Fig. 5) with eight veins (1A, 2A and 3A together considered as one vein). $Sc + R_1$ and R_5 fused, or very close, for less than $\frac{1}{2}$ their lengths beyond cell; M_1 with basal fourth very close or fused to base of $Sc + R_1$ and R_5 ; M_2 and M_3 stalked for about $\frac{1}{2}$ their lengths; CuA_1 with basal fifth fused, or very close, to base of $M_2 + M_3$; CuA_2 from near lower, outer angle of cell; cell about $\frac{1}{3}$ length of wing. Male abdominal segment 8 with ventral scale tufts (Fig. 22). Male genitalia (Figs. 20, 21) with uncus hoodlike (only slightly tapering); apical process of gnathos a broad, weakly sclerotized, spatulate process; transtilla absent; juxta with well developed setiferous, rather elongate lateral arms; valva short, broad, sacculus with anteriorly projecting arm supporting large scale tuft; aedoeagus robust, with two slightly curved, short, well-developed cornuti, and numerous microspines; vinculum shorter than greatest width, broadly rounded anteriorly. Female genitalia (Fig. 23) with ductus bursae about as long as corpus bursae, twisted, with a few scobinations near genital opening, a dense, elongate, medial patch of many microspines, and numerous sclerotized, irregular ridges near junction with corpus bursae; corpus bursae membranous, with large, curved, denticulate, spinelike signum, and many scobinations, particularly near signum; ductus seminalis attached to corpus bursae near junction with ductus bursae.

Although the genus *Megacerdresa* shows affinities to *Ceracanthia* Ragonot, *Drescoma* Dyar, *Drescomopsis* Dyar, and *Megarhria* Ragonot (the male antenna of *Megacerdresa* resembles those of *Ceracanthia* and *Megarhria* in having the base of the

shaft enlarged and with a distinct sinus, sensillae and scale tufts; the male genitalia of *Megacerdresa* are like those of *Ceracanthia*, *Drescoma*, *Drescomopsis* and *Megarhria* in possessing broad valvae with the base of the sacculus enlarged and bearing large scale tufts; the female genitalia, to some extent, look like those of *Drescoma cyrdipsa* with their long, strongly developed, spinelike signum in the corpus bursae). I propose a new genus for *cordobensis* chiefly for the following reasons: (1.) the contrasting, diagonal, white bands on the forewing, so characteristic of species of *Drescoma*, *Drescomopsis*, and *Megarhria*, are lacking in *cordobensis*; (2.) the male genitalia of *cordobensis* have the gnathos broadly spatulate and weakly sclerotized distally, but in *Ceracanthia*, *Drescoma*, *Drescomopsis*, and *Megarhria* produced into a strongly developed, well sclerotized, slender hook, and the aedoeagus is short and has robust cornuti in *cordobensis*, but is elongate and unarmed in the related genera; (3.) the female genitalia of *cordobensis* only resemble those of *Drescoma cyrdipsa*, and even in *cyrdipsa* the ductus bursae is much shorter, and differs in configuration, internal spining and irregularities.

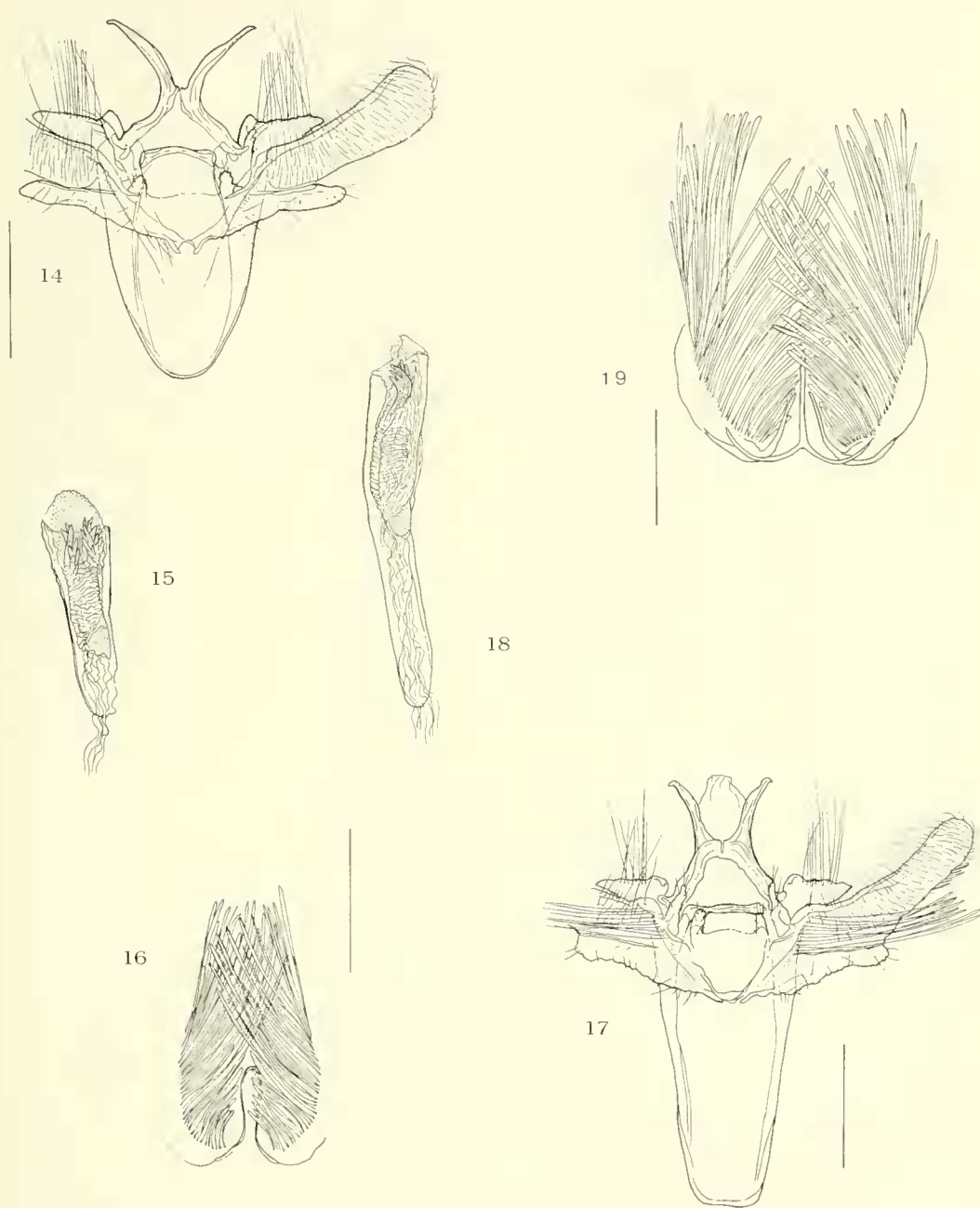
Megacerdresa cordobensis Neunzig,
NEW SPECIES

Figs. 3, 5, 10, 12, 20–23

Type locality.—Cordoba, Vera Cruz, Mexico.

Diagnosis.—The broadly spatulate distal element of the gnathos of the male genitalia, and the large curved, denticulate signum in the corpus bursae of the female genitalia will separate *cordobensis* from similar phycitines.

Description.—Length of forewing 8.0–8.5 mm. Head with frons and vertex brownish white to pale reddish brown, sometimes with fuscous and/or reddish brown scales; antenna (Fig. 10) as in description of genus; labial palpus (Fig. 12) mostly brownish white with some fuscous scales and white basally in



Figs. 14-19. Male genitalia and scale tufts of abdominal segment 8. 14, *Nevacolima jaliscoensis* n. sp., aedeagus removed, and long scales originating at inner base of valva omitted. 15, aedeagus. 16, scale tufts. 17, *Nevacolima zodia* n. sp., holotype, ventral view, aedeagus removed, and some long scales originating at inner base of valva omitted. 18, aedeagus. 19, scale tufts. (All scale lengths 0.5 mm.)

male, segments 2 and 3 less uniformly colored in female, with many fuscous and with some pale red scales; maxillary palpus mostly brownish white, simple, vestiture flared basally. Thorax dorsum and collar pale brown, in some specimens suffused with brownish red or fuscous. Forewing with ground color pale brown, costal half dusted with white, particularly near costa; fuscous patch at base of wing; antemedial line white, difficult to detect (its location defined by fuscous and reddish brown patches forming its basal and distal borders); postmedial line white, faint; small fuscous and reddish brown, indistinct, lunulate patch about mid-way on costa; discal spots black, separate, moderately distinct. Underside of forewing of male, with streaks of pale orange and fuscous sex-scales. Hindwing pale smoky brown, darker on veins and near costal and outer margins. Male abdominal segment 8 with ventral scale tufts (Fig. 22): scales forming tufts straight, moderately long and simple. Male and female genitalia as given under generic description.

Distribution.—Known only from Cordoba, in east-central Mexico.

Holotype.—♂—Cordoba, Vera Cruz, Mexico, 4 November 1966, Alfredo B. Lau, genitalia slide 3491 HHN (UCD).

Paratypes.—Same collection site as holotype, 5, 8, 13, 18 August 1966, 8 September 1966, 8, 10, 11, 20, 21, 22, 27, 31 October 1966, 3, 4, 29 November 1966, 6, 9 December 1966, 1 specimen collected by J. S. Buckett, M. R. and R. C. Gardner, all others collected by Alfredo B. Lau, 9 ♂, 13 ♀, genitalia slides 2072, 2073, 2080, 3490, 3492 HHN (UCD, NCSU).

Homoeographa mexicana Neunzig,

NEW SPECIES

Figs. 4, 11, 24, 25

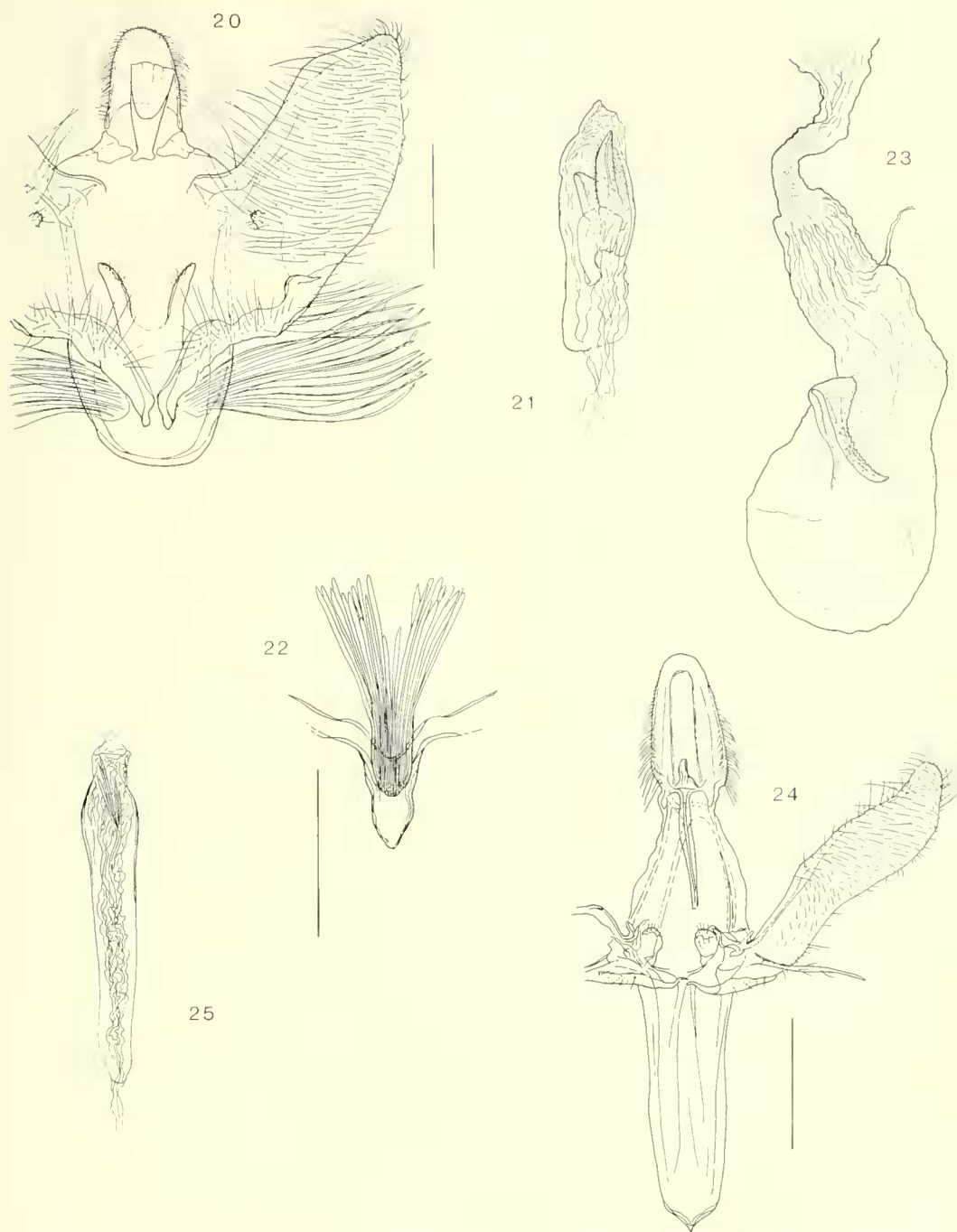
Type locality.—13 mi N. Manzanillo, Colima, Mexico.

Diagnosis.—The male genitalia of *mexicana* have a long, slender, basal, anteriorly projecting element on the apex of the gnathos,

a long digitate clasper on the inner base of the valva, and groups of slender cornuti in the aedoeagus.

Description.—Length of forewing 7.0 mm. Head with frons white to ochreous with patches of brownish red; male antenna with sinus and strongly developed tuft of scales at base of shaft; labial palpus (Fig. 11) long, appressed to frons, mostly ochre, brownish red and white (white chiefly along inner margin, and some fuscous, or black, on distal part of segments 2 and 3); maxillary palpus aigrettelike, mostly ochre with pink tip. Thorax dorsum and collar ochre. Forewing mostly ochre and reddish brown; antemedial line white, weakly developed; postmedial line white, well developed only near costa; small groups of black scales, in part interspersed with white and brownish-red scales, in basal, medial and terminal areas; discal spots moderately distinct, lower spot elongate and distinctly larger than upper spot. Underside of wing of male without costal fold or sex-scaling. Hindwing pale smoky fuscous, darker on veins and near costal and outer margins. Male abdominal segment 8 with complex scale tufts; some scales forming tuft very broad, greatly modified and angulate distally. Male genitalia (Figs. 24, 25) with uncus hoodlike, somewhat elongate; gnathos with apical process a short, rather robust hook with a long, straplike, basal projection (projection extending almost to lateral arms of juxta); transtilla absent; juxta with short, rounded, setiferous lateral arms; valva slender, with inner, basal, digitate clasper (clasper almost as long as $\frac{1}{2}$ length of valva); vinculum about $2\times$ as long as greatest width, medially pointed; aedoeagus elongate, slightly bulbous in distal $\frac{1}{3}$, with two groups of several, slender cornuti. Female unknown.

H. mexicana differs most noticeably from the only other known species in the genus, *lanceolella* Ragonot, in having the forewing mostly ochre and reddish brown with more black scales and a large, lower discal spot, and in having the male genitalia with a lon-



Figs. 20–25. Male genitalia, scale tuft of abdominal segment 8, and female genitalia. 20, *Megacerdres cordobensis* n. sp., holotype, ventral view, aedeagus removed. 21, aedeagus. 22, scale tufts. 23, ventral view ductus bursae, corpus bursae and ductus seminalis. 24, *Homoeographa mexicana* n. sp., holotype, ventral view, aedeagus removed. 25, aedeagus. (All scale lengths 0.5 mm.)

ger basal projection on the apical process of the gnathos, a longer clasper on the valva, shorter, more robust lateral arms on the juxta, an apically pointed, rather than truncate, vinculum, and an aedoeagus with more numerous and more slender cornuti.

Distribution.—Known only from the type locality, near Manzanillo on the west-central coast of Mexico.

Holotype.—♂—13 mi N. Manzanillo, Colima, Mexico, 24–26 May 1989, N. Bloomfield, genitalia slide 3498 HHN (SDNHM).

ACKNOWLEDGMENTS

I thank D. K. Faulkner (SDNHM, San Diego, California) and A. Porter (UCD, Davis, California) for providing the specimens for study, R. L. Blinn, L. L. Deitz, and D. L. Stephan (NCSU, Raleigh, North Carolina) for critically reading an initial draft of this paper, and E. G. Munroe (Ontario, Canada) and M. A. Solis (NMNH, Washington, D.C.) for additional suggestions for improvement.

LITERATURE CITED

- Cibrián-Tovar, D., B. H. Ebel, H. O. Yates, III, and J. T. Mendez-Montiel. 1986. Cone and seed insects of Mexican conifers. General Technical Report. SE-40. United States Department of Agriculture. 110 pp.
- Hedlin, A. F., H. O. Yates, III, D. Cibrián-Tovar, B. H. Ebel, T. W. Koerber, and E. P. Merkel. 1981. Cone and seed insects of North American conifers. Can. For. Serv., U.S.D.A. For. Serv., and Soc. Agric. Recur. Hidraul. Mexico. 122 pp.
- Heinrich, C. 1956. American moths of the subfamily Phycitinae. U.S. Natl. Mus. Bull. 207: 1–581.
- McGuffin, W. C. 1967. Immature stages of some Lepidoptera of Durango, Mexico. Can. Entomol. 99: 1215–1229.
- Mutuura, A. and H. H. Neunzig. 1986. New Central American *Dioryctria* and notes on previously described species of the genus in the region (Lepidoptera: Pyralidae), pp. 8–18. In Cibrián-Tovar, D., B. H. Ebel, H. O. Yates, III, and J. T. Mendez-Montiel, eds., Cone and seed insects of Mexican Conifers. General Technical Report. SE-40. United States Department of Agriculture.
- Neunzig, H. H. 1983. A new species of *Acrobasis* from Mexico (Lepidoptera: Pyralidae: Phycitinae). Proc. Entomol. Soc. Wash. 85: 256–259.
- . 1986. New records of Phycitinae from Mexico and a description of a new genus and species (Lepidoptera: Pyralidae). Proc. Entomol. Soc. Wash. 88: 122–126.
- . 1990. A new species of *Dioryctria* (Pyralidae: Phycitinae) from Mexico. Proc. Entomol. Soc. Wash. 92: 493–496.